IN THE DRAWINGS

The attached sheets of drawings includes changes to Figs. 1-3. These sheets, which include Figs. 1-3, replaces the original sheets including Figs. 1-3.

Attachment: Replacement Sheets

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-3 and 5-14 are pending in the application; Claims 5-14 having previously been withdrawn from consideration. Claim 3 is amended; and Claim 4 is canceled by the present amendment. Support for the amended claims can be found in the original specification, claims and drawings. No new matter is presented.

In the outstanding Official Action, the specification and drawings were objected to for minor informalities; Claims 3 and 4 were rejected under 35 U.S.C. § 101; Claims 1-4 were rejected under 35 U.S.C. § 102(b) as anticipated by Japanese Application No. JP 11258472 to Kondo; Claims 1-2 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,805,736 to Kim; and Claims 3-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim.

The Official Action objected to the drawings as not being designated as background material. In response Figs. 1-3 are amended to be designated as "Background Art," as recommended in the outstanding Official Action. Further, the title was objected to as not descriptive of the claimed invention. In response, the title is amended to recite "Image Processing... for Compressing an Input Image Using a Motion Vector," to be more descriptive of the claimed invention.

Accordingly, Applicants respectfully request that the objection to the drawings and title be withdrawn.

Claims 3 and 4 were rejected under 35 U.S.C. § 101 because "they recite a computer program per se." In response, Claim 4 is canceled and Claim 3 is amended to recite "A computer readable medium having stored thereon a computer-readable program which causes a computer to execute a method...," as recommended in the outstanding Official Action.

Accordingly, Applicants respectfully request that the rejection of Claim 3 under 35

U.S.C. § 101 be withdrawn.

Claims 1-4 were rejected under 35 U.S.C. § 102(b) as anticipated by <u>Kondo</u>.

Applicants respectfully traverse this rejection, as independent Claims 1-3 recite novel

features clearly not taught or rendered obvious by <u>Kim</u>.

Independent Claim 1 recites, an image processing apparatus for compressing an input

image using a motion vector, the image processing apparatus comprising:

> storing means for ***storing position information of
> pixels of a first frame that is earlier in time than a second
> frame for each address corresponding to a feature of each
> pixel***;
> first detecting means for detecting the position
> information stored at an address corresponding to a feature of a
> target pixel of the second frame;
> determining means for determining a centroid of
> candidate pixels of the first frame which are identified with the
> position information detected by the first detecting means; and
> second detecting means for detecting a motion vector of
> the target pixel from the position of the target pixel and the
> centroid.

Independent Claims 2 and 3, while directed to alternative embodiments, are amended

to recite substantially similar features. Accordingly, the remarks and arguments presented

below are applicable to each of independent Claims 1-3.

As described in an exemplary embodiment at pp. 20-21 and Figs. 4-5 of the

specification, a feature extracting unit supplies an extracted feature of each pixel on the

reference frame Fr to a database controller in conjunction with the position information (e.g.,

coordinate information). The database controller has a database (e.g., storing means) that has

axb cells indicated by feature addresses 0 to a and flag addresses 0 to b. The database

controller associates the position information, supplied from the feature extracting unit, of the

pixels of the reference frame Fr, with the feature addresses corresponding to features supplied

therewith and stores the resulting position information in the order of the flag addresses 1 to

b. At flag address 0, the number of pieces of position information which are currently stored in the feature addresses is stored. Thus, the *position information of pixels of a first frame that is earlier in time than a second frame for each address corresponding to a feature of each pixel is stored.*

Turning to the applied reference, <u>Kondo</u> describes a motion-detecting device that detects camera motion in a photographing direction of a video camera.

<u>Kondo</u>, however, fails to teach or suggest *"a storing means for storing position information of pixels of a first frame that is earlier in time than a second frame for each address corresponding to a feature of each pixel,"* as recited in the pending independent claims.

In addressing the above noted claimed feature, the Official Action relies on element 24 of Fig. 5 in rejecting the claimed "storing means." However, as noted in <u>Kondo's</u> Abstract, the memory (24) includes images of a <u>frame</u> preceding a <u>frame</u> under consideration included in the accumulated images stored in the memory. Thus, the memory (24) stores only <u>frames</u> of images, and does not store *position information of pixels* of a first frame for each address corresponding to a feature of each pixel.

Applicants note that the memory (24) described by <u>Kondo</u> is a frame memory, which is similar to the frame memories (61, 63) described in reference to Fig. 4 of the present specification. At least pp. 19-21 of the specification describe how the claimed storing means for storing (e.g., database controller 65 and database 71) *position information of pixels of a first frame... for each address corresponding to a feature of each pixel* differs from the frame memories (61, 63), which simply store frames of image information and do not store position information for each feature of each pixel.

The Official Action also cited steps S6 and S7 of <u>Kondo</u> in rejecting the claimed "storing steps" recited in Claims 2 and 3. However, these steps in <u>Kondo</u> are directed only to

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storing frames in a memory (24) as noted above, and do not relate to *storing position information of pixels of a first frame... for each address corresponding to a feature of each pixel*," as recited in the pending independent claims.

Accordingly, for at least the reasons discussed above, Applicants respectfully request that the rejection of Claims 1-3 under 35 U.S.C. § 102(b) as anticipated by <u>Kondo</u> be withdrawn.

Claims 1-2 were rejected under 35 U.S.C. § 102(b) as anticipated by <u>Kim</u>, and Claim 3 was rejected under 35 U.S.C. § 103(a) as unpatentable over <u>Kim</u>.

<u>Kim</u> describes a method and apparatus for encoding a contour of an object in a video signal by using a contour motion estimation technique. As noted in the Abstract, <u>Kim</u> describes determining centroids of current and previous contours by averaging pixel positions on each contour and outputting the displacement therebetween as a motion vector. The previous contour is then shifted based on the motion vector to produce a predicted current contour.

<u>Kim</u>, however, fails to teach or suggest "a storing means for *storing position information of pixels of a first frame ... for each address corresponding to a feature of each pixel*," as recited in the pending independent claims.

Similar to the rejection based on <u>Kondo</u>, the Official Action relies on the frame memory (160), and the steps of storing frames therein, in rejecting the above noted claimed feature. However, as described at col. 3, lines 20-25 of <u>Kim</u>, the frame memory stores contour image data including position data of contour pixels of the object in the previous frame. Thus, this memory simply stores an image and position data of contour pixels in the previous frame, but does not store position information of pixels of a first frame *for each address corresponding to a feature of each pixel*. Specifically, <u>Kim</u> fails to teach or suggest
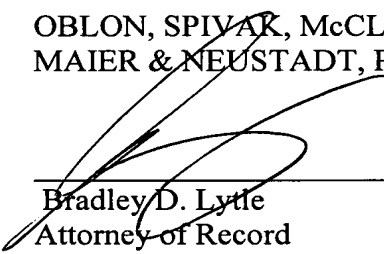
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storing position information of pixels for each address corresponding to a feature of each

pixel, whatsoever.

Accordingly, for at least the reasons discussed above, Applicants respectfully request

that the rejection of Claims 1-3 under 35 U.S.C. § 102(b) as anticipated by Kondo be

withdrawn.

Consequently, in view of the present amendment and in light of the foregoing

comments, it is respectfully submitted that the invention defined by Claims 1-3 is patentably

distinguishing over the applied references. The present application is therefore believed to be

in condition for allowance and an early and favorable reconsideration of the application is

therefore requested.

Respectfully submitted,

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